carnets de l'enfance
assignment children

Community participation and nutrition

The Kassa project in India

P. M. Shah

extrait do no 35, juillet-septembre 1976
reprint from No. 35, July-Septembe 1976

Unicef

1076

~~47/1 St. Mark's Road,~~ Bangalore ~~- 560 001~~

THIS BOOK MUST BE RETURNED BY
THE DATE LAST STAMPED

COMMUNITY HEALTH CELL
Case study

Community participation and nutrition

The Kasa project in India

COMMUNITY HEALTH CELL
326, V Main, I Block
Koramangala
Bangalore-560034
India

P. M. Shah
Professor of Paediatrics
Institute of Child Health, Bombay

Approximately half of the deaths in India among children under six years of age are directly due to severe malnutrition and fetal malnutrition.

To improve the nutrition level and health of women and children in rural communities, with special care for those identified as "at risk", the Kasa project north of Bombay has bridged the wide gap between the community and the existing health delivery system through the use of link workers from the local villages and community participation. Health, nutrition, immunization, family planning and nutrition education services are provided at the door-steps of all under-sixes and married women. The project operates out of a government Primary Health Centre with the objective of studying the feasibility of duplicating such a service delivery system throughout the country.

The organization of the Kasa project is discussed in this paper, with special emphasis on the nutrition aspect.

Considering the present trends in the development of medical services and the present rate of economic growth, it is doubtful whether at the end of this century the developing countries will

Resume en francias Participation communatutaire et nutrition, le project Kasa en Inde , p. 115.

Resum en espanol Participation de la comunidad y nutricion, el proyecto Kasa en la India, p. 125.

be in a position to provide health care to all their people, including those in the most remote villages. Two thirds of the deaths in these countries are not attended to by any medical personnel, and more than half of the world's people have no access to medical care. For those who are within reach of the medical care system, the contact may have no significant influence on their lives or health. [1]

The difficulties in delivering health services

There is a limited number of medical professionals, and in India, 80% of them have settled in cities to give medical care to only 19% of the country's population. Some 81% of India's population receives medical care through government-run Primary Health Centres (PHCs) where two doctors, and at times only one, look after the health of about 80 000 people in over one hundred villages, and where each auxiliary nurse midwife covers 10 000 inhabitants in ten to twelve villages.

Moreover, in India the average distance between the villages and the health centre is 9 km. 87% of the people attending the PHCs are from villages within a radius of 6.4 km.[2] Approximately 50% of the women are economically active. [3] In villages around Palghar, one of the project areas, about 60% of the mothers were daily wage earners and many others were heavily occupied in household chores. The majority of the children under six years of age who had the highest morbidity and mortality rates could not be carried to the nearby health centre by the working parents without a loss in daily wages. [4]

Generally, most of those who need health services are neither identified by health personnel nor do they voluntarily utilize the available services. The utilization rate of health services is poor in many developing countries. Long distances, difficult terrain,

1 Bryant, John, *Health and the developing world*, Cornell University Press, London, 1969.

2 SEA/24/14, WHO SEARO, New Delhi, 24 June 1975.

3 *Demographic yearbook* 1971, UN, New York.

4 Shah, P. M. and Junnarkar, A. R., Village assistants, SEA/FP 13/12, WHO SEARO, New Delhi, 28 February 1974.

N90-100
107

poor transportation, poverty, working morthers, heavy household chores, low health consciousness, doctors' and at times nurses' inclination towards private practice, cultural differences between those who administer medicine and its beneficiaries, the paucity of medical and paramedical personnel and their vague job assignments, faulty planning and organization of medical care often resulting from an attempted duplication of what is happening in developed countries, are some of the factors that have contributed to the under-utilization of available health services.

The community has a customary way of handling illness. First the advice of various people who are socio-culturally acceptable is sought, i.e., the family, the neighbour, the priest, the practitioner of indigenous medicine, the quack "doctor", and sometime a "witchdoctor". Only in the event of an unsuccessful outcome from their attempts is the government health service, if available, approached.

Moreover, the medical needs are not complex, as they involve recognizing threats to health which are visible and constantly reoccurring, such as diarrhoea, upper respiratory infections, malnutrition, infectious diseases and infestations. Many of these illnesses are preventable. The management and prevention of many of them do not call for the services of a doctor or a nurse. The involvement of workers from the local community can be of considerable help in bridging the cultural as well as the manpower gap between the health services and the community.

Origin of the Kasa project

In the aim of developing an economical system of delivering integrated health and nutrition services to young children and mothers throughout rural India, the Kasa Mother-Child Health-Nutrition Project (sponsored by the government of India, that of Maharashtra, and CARE-Maharashtra) was initiated on 2 December 1974, in the entire area of the Kasa PHC. To a considerable extent, this model project is an extension of the programmes worked out by the Maharashtra government project on domiciliary treatment of protein-calorie malnutrition at Palghar, aided by the WHO. The Palghar project has operated in a small area of 23 villages with a population of 23 916, since 1972. It was the accomplishments of

this project[5] which stimulated the sponsors of the Kasa project to study the feasibility from the point of view of management and finance of duplicating the programmes in the wider area of PHC, and to establish a model to demonstrate an integrated services delivery system.

The project's setting

The Kasa PHC covers all the villages in the Saiwan tribal development block, and all but nine in the Kasa block. There are 70 villages which have been stratified at the Kasa PHC according to the percentage of severe malnutrition cases among children under six years of age, divided into five groups of 14 villages each, from which ten basic control and five intensive study villages have been selected. The nine villages of the Kasa block which are otherwise in another PHC have been selected as additional control villages. The population of the 79 villages was 74 605 on 14 January 1975, of which 56 364 lived in the 60 programme villages.

Kasa village lies 126.5 km north of Bombay. The furthest village is 40 km from the PHC and 12 km from a health sub-centre. Per capita income in the project area has been estimated to be as low as Rs. 0.72 or us $ 0.08 per day. The literacy rates for male and female are expected not to exceed 20% and 10% respectively. 88% of the population is tribal, and socio-culturally and economically underprivileged. The area is hilly and covered with forests A typical tribal village consists of a number of hamlets—six on the average—and some villages spread out over 5 to 6 km from one end to the other.

All the villages have drinking water wells, except for some hamlets where the inhabitants have to draw from rivulets or walk 2 km to fetch water. The nearest telephone and telegraph communication is 25 km away. Except for a few houses in ten villages, there is no electricity.

---

5 Shah, P. M. and Junnarkar, A. R. *Domiciliary treatment of protein-calorie malnutrition: first year progress report,* Institute of Child Health, Bombay, 1973.
Shah, P. M. and Junnarkar, A. R., *Domiciliary treatment of protein-calorie malnutrition: second year progress report,* Institute of Child Health Bombay, 1974.

Converting the existing staff into multi-purpose health workers

The normal staff structure of a PHC has been maintained at Kasa. As a matter of fact, for a period of 13 months there was only one of two medical officer/s on location. The eight auxiliary nurse midwives (two at headquarters and six in sub-centres) and four smallpox vaccinators all reside in different villages, except for two. Both of these categories of personnel have been converted into multi-purpose health workers. The job assignments and areas of service were discussed in a joint meeting and the auxiliary nurse midwives agreed to look after 6500 to 7000 inhabitants each in around seven villages, and the multi-purpose male health workers to cover some 3000 inhabitants in three to four remote villages, at times at a distance of 15 km in a hill or forest area.

The job of sanitary inspector was converted into that of programme coordinator, who, with the nurse midwife, supervises the auxiliary nurse midwives and the male health workers.

Community part-time social workers

To bridge the gap between the auxiliary nurse midwife or male health worker and the community, 28 part-time social workers (PTSW's) were recruited from the local villages. The auxiliary nurse midwives and health workers form a cadre of immediate supervisors for the PTSW's who cover about 2000 inhabitants each —on an average two villages—and work four to five hours a day. They receive an honourarium of Rs. 80 or US $ 9.20 per month. They provide health and nutrition care to all under-sixes and married women, and identify "at risk" children and pregnant women. These are then attended to by the auxiliary nurse midwives and male health workers, while the medical officers concentrate on those referred for immediate care.

Additional input in terms of manpower is the programme officer. Each team member was consulted on the job description, and points for training and supervision were identified.

Selection of the PTSWs

At the onset of the project the programme was explained to the local communities. The attempt to involve a school teacher, a traditional midwife and the village head's wife as link workers was unsuccessful for the Palghar project, and hence in the Kasa project the communities were asked to suggest candidates from the villages. The 60 programme villages are divided into 28 zones, and each zone has a population of approximately 2000, scattered between one to three villages. The assistant block development officer and local leaders helped in the final selection of the PTSW for each zone. Emphasis was placed on selecting local middle-aged mothers with educational qualifications amounting to around seven years of schooling, and having leadership qualities and a desire to serve their community. The educational qualifications and age specifications were lowered for a person who was dynamic and enthusiastic and demonstrated leadership ability.

In the Kasa project area, where the literacy rate for women is less than 10% those who are literate received their schooling during the last decade, and hence it was difficult to find workers of middle age. The mean age of the workers is therefore 22 years, with seven years of schooling on an average, ranging from a minimum of four to a maximum of ten years. It was difficult to fiind female workers for all areas. In February 1976, 52% of the workers were tribal males, 24% non-tribal females and 24% tribal females. All but five of the 28 PTSW's are residents in the zones they serve, the five non-residents coming from adjacent villages.

The average number of months of employment is 12 after 16 months of operation. The drop-out rate has been heavy. Following the 1975 Khariff harvest, nine resigned, though some PTSW's who resigned later rejoined. The turnover of male workers is greater than that of female. Many PTSW's who had completed eleven years of schooling left when they obtained more remunerative jobs. On the other hand, it was a dedicated worker with a higher educational level who achieved the most in the delivery of various services. Ten of the PTSW's have been with the project since the beginning of the pre-implementation stage in December 1974.

Four weeks of training

The initial training lasted four weeks, with classroom-cum-practical demonstrations and exercises for two weeks, and the remaining period spent in the field. The training included child growth and development, nutritional disorders, common childhood diseases, infectious diseases and immunizations medical problems of pregenancy, delivery and post-partum. The training programmes were arranged to provide practical experience in taking and charting weights, identifying kwashiorkor, severe anaemia, gross vitamin A deficiency, and assessing the grade of malnutrition. The PTSW's were trained in ascertaining the correct age by using a local-events calender especially prepared for the region.[6] The training consisted of very simple explanations in the local dialect, and covered the jobs assigned to the workers. In order not to disturb their family life, the trainees returned home every night. At times some workers attended the training course along with infants. The trainees' travel expenses were reimbursed, and they were given daily allowances. The training programme was conducted by the programme officer, a medical officer, the nurse midwife, the sanitary inspector, and an auxiliary nurse midwife.

Experience showed that these workers have a limited retention capacity, and hence the training period should be short. However, it should be supplemented with built-in ongoing training.

Assignments of the part-time social workers

1. *They conduct a census* during the first months after training, which is kept up-to-date and verified quarterly.
2. *They undertake a monthly sequential weighing of children* and the recording of their weights on charts.
3. *They visit all married women every month*, filling in their cards so that early pregnancies can be detected and care provided during the antenatal period and labour. Within a fortnight

6 Shah, P. M., *Early detection and prevention of protein-calorie malnutrition*, Popular Prakashan, Bombay, 1974.

of a missed period, if the woman desires to terminate her pregnancy, she is referred to the medical officer for menstrual regulation.

4. *They independtly conduct "clinics" for under-sixes and pregnant women*; this activity is supervised by the auxiliary nurse midwives according to a time-table.
5. *They identify children and mothers who are "at risk"* and in need of special care, on the basis of criteria listed below, and show them to the auxiliary nurse midwife and medical officer at the time of their visits.
6. *They visit each child and woman* at least once a month; chil dren and women needing special care are visited every week or fortnight.
7. *They treat minor common illnesses* after one year's job experience, according to a manual of "Standing Instructions" [7] which is prepored in local dialect and describes the symptoms of common diseases and their management. They are equipped with electrolyte powders, massive vitamin A tablets, iron-folic acid tablets, piperazine, aspirine and sulphadiazine. They refer acutely ill children, mothers and even other adults to the auxiliary nurse midwife or doctor for examination and treatment, and then continue the implementation of the prescribed treatment for malaria, tuberculosis and leprosy patients.
8. *They distribute nutrition supplements* to children and others according to guidelines; they solicit the help of older village women or men for daily distribution of supplements to all beneficiaries, once they are collected together in a group, to ensure the on-the-spot consumption of the supplements by the designated beneficiaries.
9. *They administer a massive oral dose of 200 000 international units of vitamin A* every six months to the specified children in the one to six years of age group, and treat the diagnosed cases of hypo-vitaminosis A as instructed.

---

7 Shah, P. M. and Shah, Kusum P., *Standing instructions to the nurses and part-time social workers for the timely health care of children and mothers*, the Kasa Integrated Mother-Child Health-Nutrition Project, Primary Health Centre, Kasa, 1976 (mimeographed text).

10. *They help in immunization programmes* by collecting children and women for vaccination when auxiliary nurse midwives or immunization teams visit the village.
11. *They chlorinate the drinking water wells* in their service area every month.
12. *They give nutrition and health education* in homes and in "clinics", to individuals or groups.
13. *They collect vital statistics* and maintain simplified records. These include weight charts and women's cards in duplicate. The original copies are kept by the married women and mothers. The weight chart reinforces the education on good health and nutrition.
14. *They motivate parents to plan their families.*
15. *They assist auxiliary nurse midwives* in examining the haemoglobin and urine of pregnant women.

The performance of the PTSWs depends upon the quality of their training and supervision. It takes two to three months for them to develop perfection in the methodologies.

A typical day's work for a PTSW

The PTSW leaves her home at 10:00 in the morning and visits the hamlets of a village as per her time-table, which is prepared in advance for one year and revised every two months, if necessary. She carries a shoulder bag which accommodates the duplicate weight charts and cards of the under-sixes and women of the hamlets she is to visit that day, a weighing scale, a small spring balance, an adult portable scale once a month if there is a pregnant woman, the lists of "at risk" children and pregnant women, index cards and medicines. She collects the children and others in some-one's home or beneath a tree.

She weighs all the children; identifies the grade of nutrition by slipping the weight chart into a plastic overlay stencil which has multiple lines on it to indicate the various grade; decides whether nutrition supplements are needed; enquires about illness, particularly in "at risk" children and women; administers medicines; talks to mothers about feeding, hygiene and child care. She enquires about the menstrual history of the women and enters

it on their card, records abortions, still-births and the state of pregnancy. She visits homes to see those who have not attended the "clinic".

One day a week she distributes nutrition supplements in all the hamlets of a village, and examines the children and women in only one hamlet. She meets with local leaders, and casually with traditional midwives and practitioners, but does not interfere with their management. If there is any serious case or acute illness she reports it to the auxiliary nurse midwife or doctor. She maintains a diary on the day's work and keeps records of the nutrition supplements and drugs.

The auxiliary nurse midwife or male health workers visits the PTSW's area twice a week and guides and supervises her work. They both go to the homes of "at risk" cases who have not reported to the "clinic".

A doctor visits the PTSW's village once in five weeks, unless there is an emergency.

Surveillance of children "at risk"

For an indefinite period of the future the health services of most developing countries will not be able to meet either the "real" or the "felt" needs of rural communities, since the resources will continue to be in short supply. Therefore priorities must be set in relation to national epidemiological profiles so that available resources are used with maximum efficiency.[8] Among the primary objectives of the health services is the reduction of the death rate and of illnesses that lead to crippling consequences. Half of the deaths in children under six years of age in the rural project area of Palghar were directly due to severe malnutrition and fetal malnutrition. However, 75.5% of the children of this age group who died had associated severe malnutrition.

At the Palghar project 84% of the under-sixes who died showed one or more of the "at risk" indicators listed below. After a grass-roots level health care system was organized, it was

8 Shah, P. M. and Junnarkar, A. R., *Weightage of the various "at risk" factors and practicability of management,* paper presented at the International Working Conference on "at risk" factors and health of young children, Cairo, June 23-28, 1975 (in press).

COMMUNITY HEALTH CELL
326, V Main, I Block
Koramangala
Bangalore-560034
India

possible for PTSWs to identify as "at risk", in advance of their deaths, approximately 76% of the under-fives who died.[9]

The persons listed as "at risk" form the principal target group for most project programmes. A child under six years of age is listed as "at risk" if he has any one of the following indications:

- weighs 65% of the Harvard standard or less
- fails to gain weight for three successive months
- loses weight during two successive months
- weighs less than 1.5 kg at birth
- has an illness such as measles or acute gastroenteritis.

At the Palghar project, two thirds of the "at risk" under-fives have been so classified because of severe malnutrition. The "at risk" under-fives represented 2.1% of the total population, and yet the deaths among this group represented 21.5% of the total deaths, indicating the magnitude of the reducible mortalities if special care is directed towards the "at risk" segment of the population.[10]

In the Kasa project, 25.5% of the under-six children were "at risk" in May 1976. On an average there were 86 "at risk" children, distributed between two villages or 12 hamlets, under the care of one PTSW.

Extending the "at risk" concept to women

So that perinatal deaths and the incidence of babies born underweight can be reduced, the "at risk" concept has been extended to pregnant women. They are classified as "at risk" if one or more of the following factors apply[11]:

- weighs 38 kg or less before pregnancy; or weighs 42 kg or less at the 34th week of pregnancy
- is less than 145 cm in height
- is severely pale

---

9 *Ibid.*
Shah, P. M., Junnarkar, A. R., Khare R. D. and Dhole, V. S., Community-wide surveillance of 'at risk' under-fives in need of special care, *Jour. Trop. Ped. and Env. Child Health*, no. 21, 1976 (in press).

10 *Ibid.*

11 Shah, Junnarkar, Khare and Dhole, *op. cit.*

- has a child from a previous delivery who weighed less than 2 kg
- had swollen legs while pregnant or having swollen legs at time of examination
- has high blood pressure
- below 18 or above 30 years old and primaepara
- is 35 years old or above at the time of pregnancy
- has a history of abortion or still-birth during a previous pregnancy
- during a previous pregnancy, lost her child within one month
- is carrying her fifth or later child
- has a history of bleeding during pregnancy
- doubt about her having twins
- had a previous caesarian delivery
- has jaundice.

Employment for "at risk" families

The supervisory staff must see "at risk" children and women while visiting villages or hamlets, advise PTSWs on their management, and refer or show these cases to the medical officers. Families are graded as "at risk" when there is more than one child suffering from severe malnutrition.[12] The parents of these families are recommended for jobs to the local block development officer. Under the Government Employment Guarantee Scheme, they receive preferential treatment, and those who wished to work have not been disappointed.

The proper use of an "at risk" system depends upon a constant up-to-date flow of information not only on nutritional status, but also on acute episodes of diarrhoea, measles, and birth of underweight babies, as well as on emergencies and labour. There are 17 villages which are very remote, a five- to six-hour walk from the PHC. Homing pigeons stationed in remote villages can bring a message to Kasa within half an hour.

---

12 *Ibid.*
Khare, R. D., Shah, P. M. and Junnarkar, A. R., Insight into the etio-ecological factors of kwashiorkor in a community, *Ind. Ped.*, no. 13, 1976, pp. 405-407.

Identifying food beneficiaries

A system for the effective surveillance of all under-sixes and married women, especially pregnant women and lactating mothers, has thus been established for the entire project population, no matter how remote the village.

Weight standards have been established for the inclusion of under-sixes and women as nutrition programme beneficiaries. Under-sixes weighing 65% of the Harvard standard or below, receive food supplements until such time as they have reached a weight equal to or above 65% of the standard, and maintain that weight for six weeks. Food beneficiary lists are up-dated monthly by the PTSws.

The 65% mark was established for economic reasons. It had been observed at the Palghar project that the number of children in the bracket of 66 to 70% of this standard was greater than all those whose weights were in the 65% bracket or below.[13] This was confirmed at the Kasa project. Therefore, to include the children in the 66 to 70% bracket would be to double the cost of nutrition supplementation, an important consideration in the implementation of a large-scale programme.

Women who weigh 42 kg or less at the 34th week of pregnancy[14] also receive supplements during the remaining weeks of pregnancy and continuing through the first four weeks of nursing.

Distributing supplementary foods

Roasted Bengal grams and ground-nuts purchased in Bombay are used as supplements to provide 361 calories and 17.9 g of protein to the needy child and 541 calories and 26.8 g of protein to a pregnant or nursing woman. Severely malnourished children

---

13 Shah, P. M. and Junnarkar, A. R., *Domiciliary treatment: second year Progress report, op. cit.*

14 Shah, Kusum P. and Shah, P. M., Relationship of weight during pregnancy and low birth weight, *Ind. Ped.*, no. 9, 1972, pp. 526-531.
Shah, Kusum P., Selection of pregnant mothers as beneficiaries for nutrition supplements, *Jour. Obst. and Gynaec. India*, no. 25, 1975, pp. 371-373.

in the age group of 9 to 15 months are given the same items mixed with jaggery, a coarse brown sugar, in powdered form, supplying 291 calories and 11.3 g of protein. All pregnant women receive an iron-folic acid tablet three times a day during their last three months of pregnancy.

Ground-nuts and grams are highly acceptable to beneficiaries, and are supplied every day of the year. The ground-nuts are roasted at Kasa. Daily rations of supplements are packed at the project office in polyethylene bags during monsoon and in locally prepared paper bags in other seasons. The minimum shelf life of supplements in polyethylene bags is approximately eight weeks. As ground-nuts and grams are snack items, they are eaten as supplements and not as the substitute for a meal.

In May 1976, 2259 children, or 23.8% of the child population, were receiving nutrition supplements. During the year from May 1975 to May 1976, the nutritional status of 11.3% of the severely and moderately malnourished children, weighing less than 70% of the reference, improved.

The community was approached for a daily contribution of milk for several severely malnourished infants under nine months of age whose mothers had lactation failure. Three infants are receiving 250 ml of milk per day provided by the community.

During the monsoon, when it is difficult to walk on the muddy roads and rivulets are in spate, 85% of the food deliveries were made to the beneficiaries in the "inaccessible zones" of the project. In the summer, deliveries of nutrition supplements increased to 98.9% in all the zones covered by the PTSWs. With such a high level of distribution, a new problem has arisen, that of storage facilities. A solution to the problem is being sought by building traditional rat-resistant storage containers with the assistance of the local community.

Immunization programmes

The immunization campaign was intentionally begun nine months after the implementation of the nutrition and health programmes, so as to have better rapport with the community. The mass campaigns were organized during November and December 1975 (13 days) and February 1976 (12 days), in which the dis-

trict BCG team and the PHC staff members participated (the sanitary inspector, four smallpox vaccinators, seven auxiliary nurse midwives and 28 PTSW's). The community was informed and educated beforehand. In May 1976 a ten-day campaign was carried out by the local PHC staff to reach the defaulters. Ongoing immunization programmes for smallpox and DPT have been continued by the auxiliary nurse, midwives and male health workers.

The children's immunizational status for smallpox and BCG vaccines increased from 52.3% and 0.2% to 94.2% and 54% respectively during the year from June 1975 to May 1976. Only 2.1% and 1.4% of the eligible children were immunized with I and II doses respectively of DPT vaccine in June 1975. At the end of one year, the rate had shot up to 81.8% and 57%.

These achievements were very remarkable in view of the terrain of the project area, the sizable tribal population (88%), and the scale of the operation (9560 under-sixes). The good results of the immunization programmes depict clearly the extent of the rapport the PTSWs have developed with the villagers. Three monthly campaigns for defaulters and ongoing programmes by the auxiliary nurse midwives and male health workers, with the assistance of the PTSWs, will cover the remaining population. One BCG mass campaign is also to be organized to reach defaulters.

Family planning

An analysis of households with children suffering from kwashiorkor in the tribal villages at Palghar revealed that children up to the age of 14 formed 60.8% and the under-fives 32.7% of the population.[15] The planning of families particularly through spacing is of utmost importance in preventing severe malnutrition.

It was decided that family planning programmes would be taken up in the second year of the project, after a rapport had been developed with the communities. During the year from April 1974 to March 1975, only 45 vasectomies had been performed at

---

15 Khare, Shah and Junnarkar, *op. cit.*

the Kasa PHC. During the year from April 1975 to March 1976, the figure increased to 750 vasectomies and 27 tubectomies. As a matter of fact, the family planning programmes were intensified only after November 1975, and there was only one medical officer at the PHC. The performance exceeded by 19% the revised target set for the PHC by the government. It was the first time tubectomies were performed in the Kasa PHC area.

Vital support for the campaign came from government and local bodies such as the administrative body at the block level (*Panchayat Samiti*) and the Forest Workers' Society, which provided generous cash incentives. All the staff members of the PHC and the PTSW's strived to reach the target. The family planning programme will continue to be a regular PHC activity.

Health and nutrition education

The primary educational tool is the home-retained record card of the under-sixes and women. Healthy normal children, or those who were malnourished and are now improved, serve as models for demonstration. Most of the working mothers of "at risk" under-sixes leave their small children in the care of older ones of six to eight years of age. These young mother-substitutes feed the smaller children only twice a day. The PTSWs attempt to discuss with them the amount and frequency of the feeding to be given to the young children. The advice as to feeding depends upon the availability of food at home. During the two months of summer, some of the families live only on tuber roots or gruel prepared from wheat or millet, and the PTSWs suggest that the small infant's intake be supplemented with these items. Person-to-person or small group talks are part of the educational activities.

Community involvement

Medical programmes in developing countries have been structured with little regard to active participation of the community. The services offered by the state are often accepted passively as aid or charity. Few measurers have been taken to inculcate community responsibility for maximum utilization and development of the

health facilities, an essential component of total community development. Health workers should have a good understanding of total community development programmes and be able to stimulate an attitude of "self-help" and positive action among the population, which is most often willing and able to contribute, even though poor.

Participation in nutrition programme

With these objectives in view, the PTSWs, who have been recommended by their communities, have been involved in stimulating more "self'help" in terms of community participation in the programmes. They meet with the villagers and their leaders and inform them of the nutritional and immunizational status of their children, and list the names of those who are "at risk" and require special care. The social problems encountered while running these programmes are discussed and many times solutions have been suggested by the villagers themselves. A fairly good rapport has been developed with all the villagers.

The villagers provide "clinic" sites on the verandas of their huts or houses. They assist in collecting the children and women. In approximately one third of the villages, someone from the hamlet collects the beneficiaries and has them eat their nutrition supplement in front of her or him. When told of the problem of feeding small infants whose mothers had lactation failure, the community provided milk for 13 children in the Palghar project and three in the Kasa.

Road construction and active support of immunization campaigns

There have been instances at the Kasa and Palghar projects when villagers have constructed roads to facilitate communication with the PHC. During mass immunization campaigns, the block administration (*Panchayat Samiti*) sanctioned Rs. 2500 (US $ 290) for the project, and the Forest Workers' Society and villagers made arrangements to meet the local needs of the teams, serving tea, breakfast, lunch and dinner for 36 persons for a total of 25 days. The village leaders educated the population on immunizations and collected children for the shots.

Financial contributions

The Palghar project, after its four years of existence, is now being financed entirely by the local village level administrative body (*Gram Panchayat*) and block level (*Panchayat Samiti*) and district level people's administration (*Zilla Parishad*). These are contributing 20, 30 and 50% respectively for the salaries of eight PTSW's and the district administration will provide the necessary nutrition supplements. The local health unit staff will manage, guide and supervise the programmes. At present the operational research team has withdrawn completely, and will carry out a survey after two years.

This financial contribution from the local community will generate the active involvement of the villagers, which should lead to a better performance on the part of the PTSWs and to a greater awareness that everyone in the village indirectly contributes towards her or his remuneration. The field of community participation could be widened to include improvement of the water supply, environmental sanitation, communication and obtaining of grains and funds for nutrition supplements for the children and mothers. The community's organized participation can be of assistance in establishing cottage industries, which could eventually help to raise its income.

Collaboration with traditional health practitioners

A meaningful collaboration with the 140 traditional midwives (*Dais*) and 278 traditional practioners (*Bhagats*) of the area is still to be organized. However, the PTSW's and supervisors have maintained good relations with this community health personnel.

Some conditions for success

In bringing health and nutrition services to the most needy villagers, the first step is to identify them. This the PTSWs can do after a short training period. In the long run, the educational level of the link worker may not be so important as a willingness to learn, initiative, and the stamina to cover the required distances. Once a pattern for the delivery of health and nutrition services

has been established, the turnover among the PTSWs is of less importance, because of the trust already established between the villagers and the PHC staff. When the community has an understanding of the programmes, it is easier for the replacement worker to function well from the start.

A critical analysis of the accomplishments and deficiencies of the Kasa project, which is in operation in the context of a government PHC, reveals that the planning, coordination, supervision and other components of management are the sine qua non for the successful implementation and duplication of such programmes elsewhere.

COMMUNITY HEALTH CELL
326, V Main, I Block
Koramangala
Bangalore-560034
India

N40-100
107